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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/749,114	GUO, QING	
	Examiner	Art Unit	
	Sulaiman Nooristany	2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-36 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

This Office Action is response to the application (10/53472) filed on 30 December 2003.

Claim Objections

Claim 27 is objected to because of the following informalities: Examiner is going to assume that claim 27 dependent upon the claim 26 and not upon the claim 28 based on the first set of the claims 1-18. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11, 13-29, 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bordnaro** U.S. Patent No. **US 6,868,094**. in view of **Edmison** U.S. Patent No. **US 7,127,508.**

Regarding claims 1 & 19, Bordnaro teaches wherein in an initiator agent, a method for determining performance of a network link between the initiator agent **(sender)** and a target agent **(responder)**, the method comprising:

creating a measurement packet group containing a set of measurement packets **(Fig. 1A, unit 20a & 20b – probe packets)**,

each measurement packet in the measurement packet group containing a respective measurement packet identity **(sequence #)** relative to other measurement packets in the measurement packet group and containing at least one measurement performance metric **(time-stamp)** associated with the initiator agent **(Fig. 4, unit 100 – sender transmits probe packet containing send_seq_no, send time (STOD) reserving recv_seq_no, Recv_time (RTOD))**;

receiving a response packet group containing a set of response packets from the target agent **(Fig. 4, unit 104 – sender receives probe packet)**, each response packet containing at least one target performance metric calculated by the target agent using the measurement performance metric in a corresponding measurement packet of the measurement packet group **(Fig. 4, unit 102 – responder receives probe packet; increments receives counter; echoes modified probe packet further containing recv_time, recv_seq_no (from receive counter), delta_time in reserve field)**; and

calculating at least one network link metric from the at least one target performance metric in each response packet of the response packet group, the at least one network link metric identifying a packet latency and packet loss rate between the initiator agent and target agent **(Fig. 4, unit 104 – sender calculated and optionally records one-way and or round-trip latencies; determines packet loss).**

With respect to claim 1 & 19, Bordnaro teaches 3the invention set forth above except for the claimed "*forwarding each measurement packet in the measurement packet group to a target agent over a communications network supporting communication between the initiator agent and the target agent*". Edmison teaches

that it is well known to forwarding each measurement packet in the measurement packet group to a target agent over a communications network supporting communication between the initiator agent and the target agent **(Fig. 2, unit 40 – Packet Forwarder)**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bordnaro's invention by using a packet forwarder and a first probe packet manager; the first input port being adapted to receive a first stream of packets from a source for a destination, the first stream of packets having at least one associated service level parameter; the first probe packet manager adapted to, on an ongoing basis and independently of said source generate a probe packet and pass each probe packet to the first packet forwarder; the first packet forwarder being adapted to add to each probe packet a respective source transmit time which represents a current network time and to insert the probe packet into the stream of packets to generate a first probe packetized stream of packets; the first packet forwarder being further adapted to forward each packet of the probe packetized stream of packets on towards the destination in accordance with the at least one associated service level parameter, as taught by Edmison.

Regarding claims 2 and 20, Bordnaro and Edmison together taught the method of claim 1 as described above. Bordnaro further teaches wherein, repeating creation of each measurement packet and forwarding of each measurement packet in a sequence for each measurement packet of the measurement packet group **(seq_no)**, such that

measurement packets in the measurement packet group are forwarded to the target agent in a sequence **(Fig. 4, unit 100 – sender transmits probe packet containing send_seq_no, send time (STOD) reserving recv_seq_no, Recv_time (RTOD)).**

Regarding claims 3 & 21, Bordnaro and Edmison together taught the method of claim 2, as described above. Bordnaro further teaches wherein, creating a measurement packet group containing a set of measurement packets comprises, for each measurement packet:

calculating a measurement sequence number for that measurement packet that indicates the measurement packet identity **(Fig. 3, unit 20 – Rcv seq_no & Send seq_no, unit 44 – counter)** relative to a total number of measurement packets to be created within the measurement packet group **(sending packets from sender to responder, Fig. 3, unit 56 -- comparator)**

inserting the measurement sequence number for that measurement packet into the measurement packet **(sender places sequence number (starting from 1) in the send seq_no field of the packet – Col. 10, lines 52-53)**; and

inserting a measurement group count into the measurement packet, the measurement group count **(Fig. 3, unit 44 – counter)** indicating the total number of measurement packets to be created within the measurement packet group, the measurement sequence number and measurement group count allowing the target agent to compute a packet loss metric of measurement packets within the measurement packet group **(responder places a receive time stamp in the recv_time field,**

recv_seq_no field & calculates the amount of time the packet spent in the responder and places this delta field in the delta_time field – Col. 10 lines 58-64).

Regarding claim 4 & 22, Bordnaro and Edmison together taught the method of claim 3, as described above. Bordnaro further teaches wherein forwarding each measurement packet in the measurement packet group to a target agent comprises, for each measurement packet:

generating a measurement transmit timestamp for that measurement packet **(time-stamp)**;

inserting the measurement transmit timestamp as the measurement performance metric into the measurement packet, the measurement transmit timestamp allowing the target agent to compute a measurement packet one way travel time between the initiator agent and the target agent upon receipt of that measurement packet by the target agent **(by time stamping a dedicated probe data packet at the source, latency through the network measured at the destination (target agent) – Col. 3, lines 34-36, One-way metrics also include measure of relative latency as among two or more data packets, with the same modest requirement – Col. 3, lines 50-53)**; and

transmitting the measurement packet containing the sequence number for that measurement packet, the group count, and the measurement transmit timestamp to the target agent **(Fig. 4, unit 100 – sender transmits probe packet containing send_seq_no, send time (STOD) reserving recv_seq_no, Recv_time (RTOD))**.

Regarding claims 5 & 23, Bordnaro and Edmison together taught the method of claim 4, as described above. Bordnaro further teaches wherein receiving each response packet in the response packet group at the initiator agent comprises, for each response packet:

receiving the response packet at the initiator device **(Fig. 4, unit 104 –sender receives probe packets)**;

generating a response receipt timestamp for the response packet **(time receipting at destination – Col. 3, lines 47-48)**;

obtaining, within the response packet, a target processing timestamp as the at least one target performance metric calculated by the target agent, the target processing timestamp indicating a time at which the target agent processed a measurement packet of the measurement packet group to produce the response packet, the response receipt timestamp and the target processing timestamp allowing the initiator agent to compute a one way travel time for packets transmitted between the target agent and the initiator agent upon receipt of that response packet by the initiator agent **(By time stamping a probe data packet at the source and also at the destination, and then by echoing the probe data packet back to the source, two-way latency through the network may be measured at the source. By time stamping successive probe data packets, variance in network latencies as between the successive probe data packets may be measured – Col. 3, lines 35-43)**.

Regarding claims 6 & 24, Bordnaro and Edmison together taught the method of claim 5, as described above. Bordnaro further teaches wherein calculating at least one network link metric from the at least one target performance metric in each response packet of the response packet group comprises, for each response packet:

calculating the at least one network link metric in association with the response packet **(Fig 3)**, the at least one network link metric including at least one of:

i) a response packet one way travel time between the target agent and the initiator agent **(Fig. 3, one-way)** as a time difference between the target processing timestamp and the response receipt timestamp **(Fig. 3, unit 20 – send_time, recv_time , delta_time);** and

ii) a measurement packet one way travel time between the initiator agent and the target agent as a time difference between the measurement transmit timestamp for a measurement packet that corresponds with the received response packet and the target processing timestamp that the target agent includes within the response packet **(One-way metrics include measures of absolute latency for a data packet through the network, and require only time stamping at the source and time receipting at the destination – Col. 3, lines 45-50)**;

iii) a round trip travel time for transmission of a measurement packet from the initiator agent to the target agent and receipt of a corresponding response packet transmitted from the target agent to the initiator agent **(Fig. 3 – round trip, Fig. 4, unit 104 – sender calculated and optionally records one-way and or <u>round-trip</u> latencies; determines packet loss).**

Regarding claims 7 & 25, Bordnaro and Edmison together taught the method of claim 6, as described above. Bordnaro further teaches wherein repeating receiving each response packet and calculating at least one network link metric in a sequence for each response packet of the response packet group, such that a respective at least one network link metric is calculated for each response packet **(Fig. 3-4).**

Regarding claims 8 & 26, Bordnaro and Edmison together taught the method of claim 7, as described above. Edmison further teaches wherein calculating the at least one network link metric in association with the response packet comprises:

calculating an average one way travel time between the initiator agent and the target agent for packets in at least one of measurement packet group and the response packet group; and

calculating an average round trip travel time for transmission of a measurement packet in the measurement packet group sent from the initiator agent to the target agent and for receipt of corresponding response packets in the response packet group that were transmitted from the target agent to the initiator agent **(the first network element combines the latencies of multiple probe packets to determine an average latency for round trip (Note: first it calculates one way transmission process before it average out the round trip) packet transmission for the particular source, first network element, second network element, destination, service level parameter permutation – Col. 3, lines 35-39)**.

Regarding claims 9 & 27, Bordnaro and Edmison together taught the method of claim 8, as described above. Edmison further teaches wherein maintaining clock synchronization between the initiator agent and the target agent **(The probe packet manager 50 operates in its own time domain which need not be synchronized with the time of the network timer 42 or with the probe packet manager or network timer on the destination network element – Col. 8, lines 10-14)**.

Regarding claims 10 & 28, Bordnaro and Edmison together taught the method of claim 3, as described above. Bordnaro further teaches wherein receiving a response packet group containing a set of response packets from the target agent comprises, for each response packet:

identifying a response sequence number within that response packet **(Sender 18a receives the reply with send_seq_no=3, recv_seq_no=2 – Col. 12, lines 15-30)**; identifying a response group count within that response packet, the response group count indicating the total number of response packets to be created within the response packet group for transmission to the initiator agent **(Sender 18a knows there was 3-2=1 packet lost on the way out – Col. 12, lines 31-32)**; and

wherein calculating at least one network link metric from the at least one target performance metric in each response packet of the response packet group comprises:

identifying a completion event for receipt of the response packet group, and in response to identifying the completion event, determining at least one packet loss metric of packets lost in transmission between the initiator agent and target agent based

upon received response sequence numbers and a total number of packets in a packet group identified by the response group count **(Packet loss may be summarized as follows, in this example, calculations being in accordance with equations (4) and (5) above. Loss(SD)=1; Loss(DS)=1; MIA=1. In accordance with equation (6) above, it may be seen that Total packet loss=3 – Col. 12, lines 56-60)**.

Regarding claims 11 & 29, Bordnaro and Edmison together taught the method of claim 10, as described above. Bordnaro further teaches wherein the at least one packet loss metric includes at least one of:

a round trip packet loss metric **(missing in action (MIA) – Col. 12, lines 1-9)**;

a one way packet loss metric of packets transmitted from the initiator agent to the target agent **(Loss (SD) is packet loss on the way to responder (from source to destination) – Col. 11, lines 60-61)**; and

a one way packet loss metric of packets transmitted from the target agent to the initiator agent **(Loss (DS) is packet loss on the way back from responder (from destination to source) – Col. 11, lines 66-67)**.

Regarding claims 13 & 31, Bordnaro and Edmison together taught the method of claim 1, as described above. Bordnaro further teaches wherein creating a measurement packet group comprises:

for each measurement packet, inserting an amount of payload data into the measurement packet **(at least sixteen bytes are needed in the UDP payload – Col. 7, lines 56-61)**;

Edmison further teaches wherein each response packet in the response packet group includes a copy of the payload data within a corresponding measurement packet of the measurement packet group **(Fig. 3 -- the probe packets will each take the form of a standard IP packet, with enough empty packet payload space to collect the time and packet information from the first and second network elements)**, and wherein the method comprises:

repeating creation of each measurement packet, forwarding of each measurement packet of the measurement packet group,

receiving a response packet group and calculating at least one network link metric in a sequence of multiple iterations, and for each measurement packet group in each iteration in the sequence of iterations **[see above rejection]**,

adjusting the amount of payload data inserted into the measurement packet sequence group to identify how the calculated at least one network link metric changes based on the adjusted amount of payload data, at least one of the amounts of payload data inserted into the measurement packet causing an overall size of the measurement packet to substantially reflect application level traffic between the initiator agent and the target agent **(If the IP packet payload was less than 38 bytes, then extra, un-used data fields have to be placed in the structure until a minimum of 38 bytes of data is achieved. The reason why the payload must be at least 38 bytes is because the**

upper layer Ethernet protocol can't encapsulate and send payload data across the optical network smaller than 38 bytes – Col. 9, lines 2-8).

Regarding claims 14 & 32, Bordnaro and Edmison together taught the method, as described above. Bordnaro and Edmison also teach wherein an target agent, a method for determining performance of a network link between the target agent and an initiator agent, the method comprising:

Bordnaro further teaches wherein receiving a measurement packet group containing a set of measurement packets, each measurement packet in the measurement packet group containing a respective measurement packet identity **(seq_no)** relative to other measurement packets in the measurement packet group and containing at least one measurement performance metric **(time stamp)** associated with the initiator agent **(Fig. 4, unit 102, Responder receives the packet and increments its seq_#1 into reply packet – Col. 12, lines 17-19)**;

calculating at least one target performance metric for each measurement packet received in the measurement packet group, the at least one target performance metric calculated using the measurement performance metric and measurement packet identity from a corresponding measurement packet of the measurement packet group, the at least one target performance metric identifying a packet latency and packet loss metrics for measurement packets transferred between the initiator agent and target agent **(One-way latency maybe calculated by sender or by responder – Col. 10, lines 33-35, Fig. 4, unit 104 – responder calculate the amont of time the packet**

spentin the responder – Col. 10, lines 58-63, sender calculated and optionally records one-way and or round-trip latencies; determines packet loss);

creating a response packet group containing a set of response packets **(Fig. 1B, unit 20a – probe packets)**, each response packet containing the at least one target performance metric calculated by the target agent using the measurement performance metric from a corresponding measurement packet of the measurement packet group **(responder places the delta time in the delta_time (responder) field – Col. 10, lines 63-64)**; and

Edmison further teaches forwarding each response packet in the response packet group to the initiator agent over a communications network supporting communication between the initiator agent and the target agent **(Fig. 2, unit 40 – Packet Forwarder)**.

Regarding claims 15 & 33, Bordnaro and Edmison together taught the method of claim 14, as described above. Bordnaro further teaches wherein receiving a measurement packet group containing a set of measurement packets comprises, for each measurements packet:

generating a target processing timestamp upon receipt of the measurement packet, the target processing timestamp associated with the measurement packet received and indicating a time at which the target agent receives the measurement packet **(responder places a receive time stamp in the recv_time field of the packet – Col. 10, lines 59-60)**;

obtaining a measurement group count from the measurement packet, the measurement group count indicating the total number of measurement packets to be received within the measurement packet group **(responder places the receive counter in the recv_seq_no field of the packet – Col. 10, lines 61-61)**;

obtaining a measurement sequence number from that measurement packet, the measurement sequence number indicating the measurement packet identity of that measurement packet relative to a total number of measurement packets to be created within the measurement packet group as indicated by the measurement group count **(responder places the receive counter in the recv_seq_no field of the packet – Col. 10, lines 61-61)**; and

obtaining a measurement transmit timestamp as the measurement performance metric from the measurement packet, the measurement transmit timestamp indicating a time at which the initiator agent transmitted the measurement packet to the target agent sender **(Sender 18a also places a timestamp in the send timestamp field and transmits the jitter probe packet to responder 18b – Col. 10-, lines 53-55)**.

Regarding claims 16 & 34, Bordnaro and Edmison together taught the method of claim 15, as described above. Bordnaro further teaches wherein calculating at least one target performance metric for each measurement packet received in the measurement packet group comprises:

calculating, as the at least one network link metric in association with the measurement packet, a measurement packet one way travel time between the initiator

agent and the target agent as a time difference between the measurement transmit timestamp for a measurement packet that corresponds with the received response packet and the target processing timestamp that the target agent generates upon receipt of the measurement packet **(one way metrics include measures of absolute latency for a data packet through the network, require only time stamping at the source and time receipting at the destination—Col. 3, lines 45-47, responder places a timestamp upon receipt of the packet – Col. 7, lines 44-46, sender reads the Delta time field which contain the elapsed process time, of responder in echoing the probe data packet back to the sender where sender calculates a first difference between the send_time_field and the Delata_time field in any suitable manner – Col. 7, line 66 – Col. 8, line 10)**.

Regarding claims 17 & 35, Bordnaro and Edmison together taught the method of claim 15, as described above. Bordnaro further teaches wherein calculating at least one target performance metric for each measurement packet received in the measurement packet group further comprises:

identifying a completion event for receipt of the measurement packet group **(Note: transmitting packets either from source to destination or from destination to source)**, and in response to identifying the completion event:

i) calculating a packet loss metric of packets lost in transmission between the initiator agent and target agent based upon received measurement sequence numbers and a total number of packets in a measurement packet group identified by the

measurement group count **(sender receives the reply with send_seq_ no=3, recv_seq_no=2, sender knows there was 3-2=1 packet lost on the way out – Col. 12, lines 30-32)**; and

ii) calculating an average one way travel time for measurement packets transmitted between the initiator agent and the target agent in the measurement packet group by averaging the measurement packet one way travel time across a number of measurement packets received **(the first network element combines the latencies of multiple probe packets to determine an average latency for round trip (Note: first it calculates one way transmission process before it average out the round trip) packet transmission for the particular source, first network element, second network element, destination, service level parameter permutation – Col. 3, lines 35-39)**.

Regarding claims 18 & 36, Bordnaro and Edmison together taught the method of claim 17, as described above. Bordnaro further teaches wherein creating a response packet group containing a set of response packets comprises:

for each measurement packet received in the measurement packet group:

i) copying the contents of that measurement packet into a corresponding response packet generated and corresponding to that measurement packet **(Responder receives the packet, places the receive counter in the recv_seq_no field of the packet – Col. 10, lines 58-61)**;

ii) inserting the target processing timestamp into the response packet **(places a receive time stamp in the recv_time field of the packet – Col. 10, lines 59-60)**;

iii) inserting at least one of the packet loss metric **(Loss(SD)=1 – Col.12, line 58)**and the average one way travel time for measurement packets as the at least one target performance metric within the response packet **(calculated the amount of time the packet spent in the responder and places this delta time in the delta_time field – Col. 10, lines 62-64)**; and

performing the operation of forwarding that response packet of the response packet group to the initiator agent **(responder transmits the packet back to sender – Col. 10, lines 64-65)**.

Claims 12 & 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bordnaro** U.S. Patent No**. US 6,868,094.** in view of **Edmison** U.S. Patent No. **US 7,127,508.** further in view of **Dobbins** U.S. Patent No. **US 6,711,171.**

Regarding claims 12 & 30, Bordnaro and Edmison together taught the method of claim 8, as described above. Bordnaro further teaches wherein the measurement packets and the response packets include a packet verification identity including cryptographic information allowing the initiator agent and target agent to verify their identity using a crypto graphic **(numeric code)** verification process; and wherein creating a measurement packet group containing a set of measurement packets comprises, for each measurement packet

inserting an initiator communications port identity **(UDP)** into each measurement packet allowing the target agent to identify a communications port on the initiator agent to which to transmit response packets in response to receiving each measurement packet; and wherein receiving a response packet group comprises **(Fig. 3, unit 20 – probe type, Tells responder what kind of probe this is. This may simply be a numeric code representing the probe type, to distinguish among various types of probes constructed in accordance with the invention that may be concurrently in transit within a given network. Responder reads the probe type field first, and interprets the remaining fields in accordance with an established protocol for the given probe type – Col. 7, lines 20-39)**:

Bordnaro and Edmison are silent regarding the claimed "*opening a communications port for reception of response packets in the response packet group, the communications port corresponding to the initiator communications port identity specified in the measurement packets of the measurement packet group; and*

identifying a completion event for receipt of the response packet group, and in response to the completion event, closing the communications port to prevent unauthorized communications on the communications port during times when no response packets are expected"

Dobbins teaches wherein opening a communications port for reception of response packets in the response packet group, the communications port corresponding to the initiator communications port identity specified in the measurement packets of the measurement packet group; and

identifying a completion event for receipt of the response packet group, and in response to the completion event, closing the communications port to prevent unauthorized communications on the communications port during times when no response packets are expected **(Three phases generally occur during connection-oriented communications, including connection establishment, data transfer, and connection termination – Col. 7, line 62, Col. 8, line 19)**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bordnaro's and Edmison's invention by disclosing of the three phases as described above. Dobbins further discloses In the connection establishment phase, the first time a source has data to be sent to a destination, a logical association, also called a connection or a path, is established between the source and the destination. The connection defines elements and connections between the elements, for example, the switches between the source and the destination, and the ports of the switches through which the data will pass. The path setup at the establishment phase is the path on which the data will be transmitted for the duration of the active connection. A switch, and other devices similar in operation to a switch, may be referred to as a node, intermediate system, interface message processor, or gateway. A port is an interface on a switch or similar device that provides a physical communication path to other devices, for example to other ports of other switches. During the data transfer phase, data is transmitted from the source to the destination along the connection, which includes the port-to-port connections of the switches (cross-connect). After a certain amount of time, or at the occurrence of a certain event,

the connection enters the termination phase, in which the connection is terminated, and the elements which made up the connection are freed to support other connections, as taught by Dobbins.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sulaiman Nooristany whose telephone number is (571) 270-1929. The examiner can normally be reached on M-F from 9 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu, can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sulaiman Nooristany 10/04/2007

JEFFREY PWU
SUPERVISORY PATENT EXAMINER